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ABSTRACT

This conference paper identifies and describes practices which appear to be associated with successful schooling of students in heterogeneous groupings. Fundamental characteristics of heterogeneous public schools include actualization of the "zero reject" principle and implementation of exemplary educational practices from both general and special education. Instructional practices described include: outcomes-based instructional models, instructional practices utilizing peer power, cooperative learning models, effective use of homogeneous and multi-age groupings, redefining of school organizational structure, redefining of professional roles, and creating opportunities for collaboration. The staff of heterogeneous schools need to acquire common conceptual frameworks, language, and technical skills through inservice training. Areas of training could include collaboration, best educational practices, and use of the clinical supervision model. (JDD)

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ACCOMMODATING FOR GREATER STUDENT VARIANCE IN LOCAL SCHOOLS

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ABSTRACT

The purpose of this paper is to identify the fundamental characteristics of successful heterogeneous public schools. Included are specific examples of educational and organizational practices which enable schools to accommodate greater student variance. These examples are derived from the results of research and model demonstration efforts as well as the authors' first hand experiences in Vermont schools which have made the commitment to educating all of their students in heterogeneous groupings within their neighborhood public schools.

The purpose of this paper is to identify and describe those practices which appear to be associated with successful schooling of students in heterogeneous groupings. Before discussing these practices, it is important to clarify what we view as fundamental characteristics of successful heterogeneous public schools.

First, these schools are comprehensive. They are comprehensive in that they actualize the "zero reject" principle (Lilly, 1971) by welcoming and educating all students in their own "home" schools; they accommodate the unique variations in students' educational needs through responsive and fluid instructional options rather than "pigeonholing" students into one of several standing, standard programs (Skrtic, 1987). They also are comprehensive in that they expand the body of decision-makers concerned with individual student, instructional, and organizational issues to include not just a small, select group of administrators and instructional personnel, but to include also members of the broader school and general community (e.g., parents, students, paraprofessionals, school nurses, guidance counselors, lunch room staff, community members, generic human service agency personnel, community employers). Finally, they are comprehensive in that they look beyond academic achievement as the major or sole criterion of school success and promote the mastery of social and life skills requisite to success in work, home, recreational and community life beyond high school.

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The second characteristic of successful heterogeneous schools is the great amount of effort put forth to ensure that school personnel are as effective as they can be in their instructional practices. The leadership of these schools are bent upon merging and successfully implementing exemplary educational practices from both general and special education in order to take advantage of the knowledge base and demonstrated benefits of both sets of practices. They do this by making available to all instructional and administrative staff timely and intensive training and supervision related to targetted practices.

This paper is structured to provide the reader with brief descriptions and specific examples of educational and organizational practices and beliefs which promote student success in heterogeneous schools. These examples are derived from the results of research and model demonstration efforts as well as the authors' first hand experiences in Vermont schools which have made the commitment to educating all of their students in heterogeneous groupings.

Instructional Practices

Outcomes-Based Instructional Models

Common to most outcomes-based models is a sequence of six teacher behaviors (Block & Anderson, 1975; Brookover, et.al, 1982; Vicker, 1988). First, teachers engage in diagnostic procedures to determine whether students have the prerequisites for the lesson or unit. Additional

instruction on the prerequisites is offered to students who need it. Secondly, teachers create an atmosphere of anticipation or readiness to learn by giving the students a brief description of what they will learn, why they are learning it, and what they will be able to do with the new learning. Next, teachers provide "best shot" instruction; they select and implement the instructional strategies which they judge to have the best chance of enabling all students to attain the lesson's objectives. Following best shot instruction, teachers structure opportunities for guided practice in which each student's progress is monitored. The objective here is to assure that students have the skills and procedural knowledge to successfully engage in independent practice.

The fifth teacher behavior involves the administration of a formative assessment or test to determine whether students have mastered the lesson's or unit's objectives. Students who need additional instruction receive it, while those who have mastered the objectives engage in enrichment activities. The sixth and final teacher behavior involves the summative assessment of students' mastery of a cumulative set of objectives from a number of lessons or units.

Instructional Practices Utilizing Peer Power

A major resource which can facilitate the education of all learners within regular education is the use of "peer power." In our estimation, peer power is a key variable in meeting the needs of a diverse student population within regular education settings. Schools which effectively utilize peer resources do so in a variety of ways. Among the strategies employed are peer tutor and peer buddy systems, cooperative learning models, and the inclusion of peers on the individualized educational planning teams of students with identified handicaps.

Peer tutor systems. Same-age and cross-age peer tutoring systems are two forms of peer power upon which heterogeneous schools need to capitalize. In a review of the literature regarding peer tutoring, Pierce, Stahlbrand, and Armstrong (1984) have cited the benefits of peer tutoring to tutees, tutors, and instructional staff.

Good and Brophy (1984) have suggested that peers trained as tutors may be more effective than adults in teaching particular content such as mathematical concepts (Cohen & Stover, 1981). They further speculate that their superior effectiveness lies in their tendency to be more directive than adults; their familiarity with the material and their resultant understanding of the tutee's potential frustration with the material; and their use of more meaningful and age-appropriate vocabulary and examples.

Peer tutoring partnerships are a cost-effective way for teachers to increase the amount of individualized instructional attention available to their students (Armstrong, Stahlbrand, Conlon, & Pierson, 1979). By using same-age and cross-age tutors, teachers can add instructional resources to the classroom without adding additional adult personnel.

Peer support networks and peer buddies. Historically, some students, particularly students with disabilities, have been excluded from certain aspects of their school life (e.g., school clubs and other co-curricular activities, school dances, attendance at athletic events). Peer support groups or networks have been established in some schools and have proven to be effective in enabling these students to participate more fully in the life of their schools.

The purpose of a peer support network is to enrich another student's school life.

> Peer support is a bunch of kids working together to break down the barriers that society has built into the public's idea of what the norm is. Teachers and peers need to be trained; they need to understand that the goal of peer support is not competitive academics. The goal is to belong, to meet new people, to learn to break down the barriers. (Budelmann, Farrel, Kovach, & Paige, 1987)

Peer buddies are different from peer tutors in that their involvement with other students is primarily non-academic. The diversity of support which peer buddies can provide other students is limitless. For example, a peer buddy might assist a student with physical disabilities to use and get items from his or her locker or "hang out" in the halls with a student before or after classes. A peer

buddy might accompany a student to a ball game after school or speak to other students, teachers or parents about the unique physical, learning, or social challenges that they see their friend facing and meeting on a daily basis.

Peer support networks have helped to make heterogeneous schools places where students' learning is expanded to include an understanding of one another's lives.

Cooperative learning models

The benefits of the use of cooperative learning groups have been well documented. Cooperative learning experiences with heterogeneous groups of learners tend to promote higher achievement than competitive or individually structured learning experiences (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981; Johnson & Johnson, 1987a). This has been found to be true across grade levels, subject areas, and different types of learning tasks (e.g., concept attainment, retention, verbal problem solving, motor performance). Furthermore, students who participate in cooperative learning experiences, compared with competitive and individualistic ones, like their teachers and the subject matter more (Johnson & Johnson, 1987a).

Cooperative learning experiences, compared with competitive and individualistic ones, also promote higher levels of self-esteem as well as positive relationships, acceptance, support, trust and liking among students who are different in ethnic membership, gender, social class, and

the need for special educational services (Johnson & Johnson, 1987a; Johnson, Johnson, & Maruyama, 1983).

Critical components of cooperative learning models. Cooperative learning models, as defined by Johnson & Johnson (1987c), can be differentiated from other types of small group learning because of the presence of four critical components. The first component is positive interdependence; the perception among the students in the group that they "sink or swim together." This perception may be created by defining mutual goals; dividing the task, resources, or information among group members; assigning different roles (e.g., recorder, reader, timekeeper, observer) to members; or giving all members a common reward or grade. The second critical component is face-to-face interaction among students; the third, individual accountability for learning the assigned materials or performing the assigned task to mastery; and the fourth, the appropriate use of social, interpersonal, and small group skills. As a rule, it is recommended that the membership of cooperative learning groups be heterogeneous in ability and personal characteristics (Johnson & Johnson, 1987c).

The role of the teacher in cooperative learning models. When implementing cooperative learning, the teacher becomes more of a "facilitator of learning" or a "manager of the learning environment" than a "presenter of information" (Glasser, 1986). As a facilitator or manager, the teacher is responsible for five major sets of strategies (Johnson, Johnson, Holubec, & Roy, 1984):

1. Clearly specifying the (academic and collaborative) objectives for the lesson
2. Making decisions about placing students in learning groups before the lesson is taught
3. Clearly explaining the task, goal structure (positive goal interdependence), and learning activity to the students
4. Monitoring the effectiveness of the cooperative learning groups and intervening to provide task assistance (such as answering questions and teaching task skills) or to increase students' interpersonal and group skills
5. Evaluating students' achievement and helping students discuss how well they collaborated with each other. (p. 26)

Responding to individual differences through cooperative learning models. One question often asked by teachers new to cooperative learning is, "How do I integrate a low achieving student or a student with handicaps into heterogeneous cooperative learning groups?" Several strategies have proven to be effective (Johnson & Johnson, 1987c). One strategy is to assign the student a specific role which promotes participation and minimizes anxiety about collaborating with more capable students. Examples of appropriate roles are praising members for participation, summarizing group answers, and checking that all members can explain the group's answer. A second strategy is to

pretrain these students in select collaborative skills so they have unique expertise to bring to the group.

A third set of strategies involves adapting lesson requirements for individual students. This can be done in a number of ways. Different success criteria can be used for each group member; the amount of material each group member is expected to learn can be adjusted; or group members can study and coach one another on different problems, lists, reading materials, words, and so forth. If a test is given, the entire group might receive bonus points based upon the extent to which members exceed their individualized success criteria.

Peer membership on individualized educational planning teams. Peers also have proven to be invaluable members of individual educational planning teams for students with identified handicapping conditions. They are particularly helpful in identifying appropriate social integration goals to be included on a student's IEP.

Students also have been enlisted to assist in planning for the transition of students with handicaps from more segregated to regular education settings. Recently, the entire student body of a small junior high school met with school staff in small groups to plan the transition of a student with multiple handicaps from a segregated residential facility to their seventh grade. The advice they gave was enlightening, ranging from suggestions for an augmentative communication device which they felt would best

help the new student communicate his needs to what kind of notebook he should have to "fit in" (Scagliotti, 1987).

How peer power enables heterogeneous schools to be successful. Effective teachers try to take advantage of every resource that is available to them to promote student success in both academic and affective domains. Generating peer power through the use of peer tutoring and peer buddy systems, cooperative learning models and peer membership on IEP planning teams facilitates the education of all learners within regular education classrooms by increasing the human resources available to respond to the diverse instructional and psychological needs of a heterogeneous student body.

Effective Use of Homogeneous and Multi-Age Groupings

Homogeneous grouping, also know as ability grouping, clusters students of similar "ability." Although this practice is one of the most controversial issues in education, its use is widespread in American schools. Given that American schools and school teachers seem to be inclined to group students homogeneously in spite of evidence questioning the practice, the question becomes, "Is there a place for homogeneous grouping in schools?" In his recent review of the effects of ability grouping on the achievement of elementary school students, Slavin (1987) answers this question with a qualified "yes."

In theory, teachers group students according to performance or ability in order to more closely match the

pace and content of their instruction with the learning characteristics of different students. However, in practice, ability grouping frequently is misused or abused. Noting this, Slavin wisely cautions that research-based ability grouping plans be used only when the following conditions can be met (Slavin, 1987):

1. The grouping plan must measurably reduce student heterogeneity in the specific skill being taught;
2. The plan must be flexible enough to allow teachers to respond to misassignments and changes in student performance level after initial placement; and
3. Teachers must actually vary their pace and level of instruction to correspond to students' levels of readiness and learning rates. (p. 322)

Slavin also recommends that students be regrouped for no more than two subject areas, spending the majority of their school day in heterogeneous groupings. This increases the likelihood that low-achieving students or students with handicaps will have a heterogeneous student group as their primary reference, avoiding the potential detrimental psychological effects of being associated with a low ability track or a special class (Posenbaum, 1980; Schafer & Olexa, 1971).

Redefining School Organizational Structure

A number of characteristics of the organizational structure of the traditional American school stand in the way of heterogeneous schooling. First, most schools continue to stratify their students into high, medium, and low groups through heavy reliance upon segregated or pull-out special and compensatory education service delivery models, ability groupings, and tracking systems.

Secondly, most schools continue to rely upon a "lock step" curriculum approach (Stainback & Stainback, 1985); that is, what students are taught is determined not by their assessed individual needs, but the grade level to which they are assigned. Students are placed in a grade according to their age and expected to master the predetermined curriculum by the end of the school year. If they fail, they are retained, referred for special education or compensatory education services and pulled out of the regular classroom for part or all of their day.

Finally, most teachers, whether they have been labelled regular or special educators, generally are expected to work alone. Few schools encourage or expect instructional personnel to team teach with one another; and little, if any, time is structured into the work day for collaboration or planning with others.

Schools which are educating all of their students in heterogeneous environments have attempted to eliminate these and other organizational barriers in a number of ways.

Specifically, they have redefined professional roles; created opportunities for collaboration; and created common conceptual frameworks, knowledge, and language among school staff through inservice training.

Redefining Professional Roles and Dropping Professional Labels

"I used to think of myself as a speech and language pathologist; but now I think of myself as a teacher who happens to have training and expertise in the area of communication" (Harris, 1987). The redefinition of job functions is viewed as necessary in order for a school to make the shift from categorical educational programs (e.g., regular classroom, special classes, pull-out services for speech and language and compensatory education services) to a single unified system where broad-based support ultimately would be available to all teachers and any of the students (Villa, 1988).

Job titles and the formal or informal role definitions that accompany them determine the way in which a person behaves within a school (Brookover, et. al, 1982). For example, the title, resource room teacher, may carry with it a set of expectations that (1) this teacher works in a separate room, (2) students must leave the regular classroom to get this person's services, and (3) only those students identified as special education eligible can or will be allowed to benefit from this person's expertise. This person, however, has a great deal of training and expertise

in assessing students' strengths and needs, task and concept analysis, designing and implementing classroom and behavior management programs, and other areas which, if shared with classroom teachers, might help them to maximize their responsiveness to the diverse educational needs of students.

Suppose the resource room teacher label was dropped and this person's role was redefined to be a support person who was expected to provide technical assistance to any number of educators in the building through modeling, consultation, team teaching and inservice training. Such a change in job definition should result in an exchange of skills, thus increasing the number of students whose needs may be met in heterogeneous classrooms.

The Winooski School District is an example of a Vermont school district which has taken a number of steps to redefine roles and responsibilities of school personnel in order to successfully educate all students in general education settings. First of all, a single Department of Pupil Personnel Services has been created to unite guidance, health, gifted and talented, special education, compensatory education, and early childhood services and personnel. The former special education administrator directs this department and collaborates with the other administrators to jointly supervise and evaluate all district instructional personnel. These changes have eliminated the preexisting departmental boundaries that had administratively separated programs and have facilitated the coordination of services and sharing of professional expertise.

Secondly, the roles of professional and paraprofessional personnel in the new Department of Pupil Personnel Services have become primarily consultative in nature. Whereas they historically had delivered services exclusively through pull-out programs, they now are expected to consult and team teach with general educators. The elementary communication specialist, for example, has "come out of the closet" and now delivers speech and language instruction mainly by team teaching with classroom teachers.

In a final move to alter professional roles and responsibilities, the special education classes for students with moderate and severe handicaps were closed. Students who would have been in these classes now are educated in age-appropriate classrooms and integrated community and vocational settings. The responsibility for supporting these students is distributed among a cadre of educators who collectively have skills in health, vocational, communication, counseling, and functional (i.e., domestic, community, recreational, vocational) as well as traditional (e.g., reading, math) curriculum domains.

Expecting and Creating Opportunities for Collaboration

"The integration of professionals within a school system is a prerequisite to the successful integration of students. We cannot ask our students to do those things which we as professionals are unwilling to do" (Harris, 1987).

Local schools have within them a natural and often times untapped pool of "experts." Each teacher's unique skills and interests may be of value to another teacher or a broader range of students than those for whom he or she is directly responsible. A key to successfully meeting the educational needs of all students is the development of a collaborative relationship among the school staff so that expertise may be shared. "A teacher is more willing to share responsibility for a student who presents challenges when that student comes with a team to support him" (Tetreault, 1988).

Establishing a collaborative teaming process. In a number of Vermont schools a problem-solving and decision-making process referred to as "collaborative teaming" is employed to promote the sharing of expertise (Thousand, Fox, Reid, Godek, Williams, & Fox, 1986). Collaborative teaming is a process in which team members work cooperatively to achieve a common, agreed-upon goal. The process involves the application of the principles of cooperative group learning, as forwarded by Johnson and Johnson (1987c), to adult planning groups. In the words of a collaborative team member,

> We've taken the technology of cooperative group learning for kids and applied it to our adult teams. We meet as cooperative groups. Everyone shares in the common goal, that goal being the most appropriate education for the students we serve. (Cravedi-Cheng, 1987)

Creating opportunities for teams to meet. One issue which all schools attempting to implement a collaborative teaming process must address is how the school's

organizational structure can be modified to create opportunities for staff to meet as teams. One Vermont school district has dealt with this issue by contracting a permanent substitute who rotates among schools and relieves regular classroom teachers so they may participate in meetings concerning students in their class.

Another school district has instituted the practice of reserving every Friday morning for team meetings. All professional and paraprofessional support personnel (e.g., special education teachers, nurses, counselors) are expected to hold their Friday mornings open until they are notified of scheduled meeting times for students on their caseload. During the times when they are not scheduled for meetings, they relieve classroom teachers so that they may attend their Friday meetings.

It is important for administrators to appreciate and support this type of collaborative time by coordinating the school's schedule so events are scheduled other than during times when collaboration occurs, setting an expectation that teachers will collaborate, and arranging incentives and rewards for collaboration.

Creating Common Conceptual Frameworks, Knowledge, and Language Through Inservice Training

For school personnel to be most effective in their collaborations with one another and their instruction of students, they need to share common concepts, vocabulary,

and training in instructional strategies which are founded in sound research and theory.

Staff of heterogeneous schools need to acquire the conceptual frameworks, language, and technical skills to communicate about and implement assessment, and instructional and collaborative teaming practices which research and theory say will enable them to respond to the unique needs of a diverse student body.

The authors' reading of the literature and personal experiences in providing inservice training to staff of schools attempting to establish more heterogeneous instructional opportunities for students has led them to identify several areas in which inservice training may be needed (Villa, Thousand, & Fox, 1988). One content area in which all school staff may need training involves collaboration (Johnson & Johnson, 1987b, 1987d; Thousand, et al., 1986). As already discussed, school personnel need to become skillful in implementing a collaborative teaming model and using interpersonal and small group skills to function optimally as collaborative team members.

A second area of training would promote knowledge and positive beliefs regarding current "best educational practices" in heterogeneous schooling. This training would examine the characteristics of schools which general education researchers have found to be more effective than others in promoting students' learning and development (Brookover, et al., 1982). It also would examine that which special education researchers promote as best educational

practice (Fox, et al., 1986). Armed with this information, school personnel would be equipped to articulate the demonstrated benefits of these practices and argue for the establishment and merger of exemplary practices within their school.

A third content area would cover a variety of instructional practices which enable teachers to effectively accommodate a heterogeneous group of students within general education classrooms. Training might include outcomes-based instructional models (e.g., Block & Anderson, 1975; Hunter, 1982); cooperative group learning models (e.g., Johnson, Johnson, Holubec, & Roy, 1984; Slavin, 1983); computer assisted instruction (e.g., Heerman, 1988); an assessment model which enables teachers to discuss learner characteristics and make decisions about their own instructional behavior (e.g., Lyon & Moats, in press; Lyon & Toomey, 1985); classroom management strategies (e.g., Becker, 1986); methods for teaching positive social skills and reinforcing students' use of these skills in school (e.g., Hazel, Schumaker, Sherman, & Sheldon-Wildgen, 1981; Jackson, Jackson, & Monroe, 1983); and the use of peers as tutors, buddies and members of educational planning teams.

Finally, school supervisory personnel may need some specialized training and practice in using a clinical supervision model (e.g., Cummings, 1985). If the supervisory personnel of a school are to promote teachers' successful and continued implementation of any of the assessment and instructional strategies just mentioned, they

must be skilled in observing, analyzing, and conducting conferences regarding teacher's instructional performance.

It is important to emphasize here that, whatever the training content a school's staff elects to study, the principles of effective instruction should be followed in the delivery of the content; that is, trainers need to model multiple and diverse examples of the desired knowledge or practice, provide guided practice in the application of the knowledge or practice, and arrange for coaching and feedback in the actual school situations in which the knowledge or practice is expected to be employed (Joyce & Showers, 1980).

Beliefs

Heterogeneity is possible

For school personnel to enthusiastically open their doors to a more diverse student body and promote each learner's success within regular education classrooms, it is important for them to believe or, at least temporarily, suspend disbelief that heterogeneous age-appropriate classroom environments can meet the unique educational needs of each student (Thousand, 1985; Nevin & Thousand, 1986). In other words, they must believe that they can do a quality job. They also need to trust that they will receive the material and human resources, technical assistance, and training which will enable them to effectively do the job.

Often, school and community members take a "show me" posture. Some embrace the belief that heterogeneous

would have been excluded from regular educational experiences. Students with special educational needs who have spoken out as to the positive effects of heterogeneous schooling focus on their own emotional well-being and sense of belonging. A high school sophomore has commented, "I was in a special class. I've been in regular classes for five years. I'm more a part of the school now" (Budelmann, Farrel, Kovach, & Paige, 1987). A classmate who uses a wheelchair for mobility and who is educated with her peers in heterogeneous classrooms, has stated:

> I feel like I am a part of the school. I am aware of the things that are going on; I've gone to the school car wash and homecoming. I have friends in and out of school, and this helps me feel better about myself. (Budelmann, et al., 1987)

Clearly, both young women recognize their heterogeneous school experiences as a primary source of their feelings of inclusion.

Parents as equal partners

In successful heterogeneous schools, parents are considered valid and valued members of the collaborative team; they are seen as active, contributing members in the educational planning process for their child. To view parents otherwise limits the school's access to the valuable resources which parents offer in identifying their child's strengths and needs, designing realistic and effective interventions, and evaluating the outcomes of their child's education. An appreciation for parents' unique expertise is conveyed in the eloquent words of a parent.

> Parents should be thought of as scholars of experience. We are in it for the distance. We see and feel the continuum. We have our doctorate in perseverance. We and the system must be in concert or the vision shrinks (Sylvester, 1987).

Summary

The organizational, instructional and attitudinal variables presented in this paper influence the success of students and educational personnel in heterogeneous schools. We encourage all who are interested in or charged with the responsibility of planning for school improvement to carefully examine the practices and beliefs which are operating in their schools to promote or impede continued progress toward meeting the diverse needs of all students. We further encourage the school community to embrace the belief that there are actions which each individual can take to positively influence the learning environment of all students, for "we know that a school can change if the staff desires to improve or modify beliefs, structures, and instructional practices" (Brookover et al., 1982, p. 35). The quality of education provided to this generation of school children will be determined by the collective responsible actions of the diverse group of educators and parents who commit to being life-long learners and students of the promise which research, current best educational practice, and creative problem solving offers.

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